C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.4.e 4 O'Clock (PEER 9) Mode 24 & 26 Tests from MCR

C-A-OPM Procedures in which this Attachment is used.		
4.120.4		

Hand Processed Changes

HPC No.   Date   Page Nos.   Initials

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Approved: _____*__Signature on File__*_____   _____
                 Collider-Accelerator Department Chairman   Date

V. Castillo

4.120.4.e 4 O'Clock (PEER 9) Mode 24 & 26 Tests from MCR

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:_____ **Checksum:** _____

Division B Software Filename and Checksum: Title:_____ **Checksum:** _____

<u>**Initial testing complete**</u>**:**

Test Team Leader's Name (Print): _____ **Life Number:** _____

Test Team Leader's Name (Sign): _____ **Date:** ____/____/____

<u>**Acceptance test procedure complete (following repairs and retesting if required)**</u>**:**

Test Team Leader's Name (Print): _____ **Life Number:**_____

Test Team Leader's Name (Sign): _____ **Date:** ____/____/____

<u>**Test results reviewed by**</u>**:**

Safety Section Head's Name (Print):_____ **Life Number:** _____

Safety Section Head's Name (Sign):_____ **Date:** ____/____/_____

<u>**Test results accepted by Radiation Safety Committee:**</u>

RSC Member's Name (Print):_____ **Life Number:** _____

 RSC Member's Name (Sign):_____ **Date:** ____/____/_____

1.1 Verify necessary conditions for Mode 24

	SET	**CD Key switch for**	**XY ARCS**
☐	**VERIFY**	**CD Key switch for**	**XY ARCS**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	CLOSE	**Peer 9 gate:** 5GS1	
	RESET	**Peer 9 gates:** 3GI1, 3EL1, 4GE1, 4MD1, 4MD2, 4GE2, 4GI1, 4GE3, 4EL1, and 4ED1	
☐	**VERIFY**	**Peer 9 gates:** ☐ 3GI1, ☐ 3EL1, ☐ 4GE1, ☐ 4MD1, ☐ 4MD2, ☐ 4GE2, ☐ 4GI1, ☐ 4GE3, ☐ 4EL1, and ☐ 4ED1 are	**RESET**
	SWEEP	**Peer 9 Zones:** 4Z1, 4Z2	
☐	**VERIFY**	**Peer 9 Zones:** ☐ 4Z1, ☐ 4Z2 are	**SWEPT**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**Peer 9** is in **No Access**	**MODE 24**
	RECORD	**Duration [_____ secs]** of **Beam Imminent Alarm**	
☐	**VERIFY**	**Red No Access Light** at Gates: ☐ 4GE1, ☐ 4GE2, , ☐ 4GE3 is	**ON**
☐	**VERIFY**	**Red RF Hazard Light** at Gates: ☐ 3GI1, ☐ 4GE1, ☐ 4GE2, ☐ 4GI1 is	**ON**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	REMOVE	**Reset** from gate **4GE2**	
☐	**VERIFY**	**MCR** sees gate **4GE2** is	**CLOSED**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**Attempt** to place **Peer 9** in **No Access Mode**	**FAIL**
	RESET	Gate **4GE2**	
☐	**VERIFY**	**MCR** sees gate **4GE2**	**RESET**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	REMOVE	**Sweep** from zone **4Z1**	
☐	**VERIFY**	**MCR** sees zone **4Z1** is	**NOT SWEPT**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**Attempt** to place **Peer 9** in **No Access Mode**	**FAIL**
	SWEEP	Zone **4Z1**	
☐	**VERIFY**	**MCR** sees zone **4Z1**	**SWEPT**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	REMOVE	**Sweep** from zone **4Z2**	
☐	**VERIFY**	**MCR** sees zone **4Z2** is	**NOT SWEPT**
	PLACE	**Peer 9** in **Mode 24**	

☐	**VERIFY**	**Attempt** to place **Peer 9** in **No Access Mode**	**FAIL**
	SWEEP	Zone **4Z2**	
☐	**VERIFY**	**MCR** sees zone **4Z2**	**SWEPT**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**

☐   **Check for acceptance of test Verify necessary conditions for Mode 24**

1.2   Verify necessary conditions for Mode 26

☐	**VERIFY**	**CD Key switch for**	**XY ARCS**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	CLOSE	**Peer 9** gate: 5GS1	
	RESET	**Peer 9** gates: 3GI1, 3EL1, 4GE1, 4MD1, 4MD2, 4GE2, 4GI1, 4GE3, 4EL1, and 4ED1	
☐	**VERIFY**	**Peer 9** gates: ☐ 3GI1, ☐ 3EL1, ☐ 4GE1, ☐ 4MD1, ☐ 4MD2, ☐ 4GE2, ☐ 4GI1, ☐ 4GE3, ☐ 4EL1, and ☐ 4ED1 are	**RESET**
	SWEEP	**Peer 9 Zones:** 4Z1, 4Z2	
☐	**VERIFY**	**Peer 9 Zones:** ☐ 4Z1, ☐ 4Z2 are	**SWEPT**
	PLACE	**Peer 9** in **Mode 26**	
☐	**VERIFY**	**Peer 9** is in **No Access**	**MODE 26**
	RECORD	**Duration [_____ secs] of Beam Imminent Alarm**	
☐	**VERIFY**	**Red No Access Light** at Gates: ☐ 4GE1, ☐ 4GE2, , ☐ 4GE3 is	**ON**
☐	**VERIFY**	**Red RF Hazard Light** at Gates: ☐ 3GI1, ☐ 4GE1, ☐ 4GE2, ☐ 4GI1 is	**ON**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	REMOVE	**Reset** from gate **4GE2**	
☐	**VERIFY**	**MCR** sees gate **4GE2** is	**CLOSED**
	PLACE	**Peer 9** in **Mode 26**	
☐	**VERIFY**	**Attempt** to place **Peer 9** in **No Access Mode**	**FAIL**
	RESET	Gate **4GE2**	
☐	**VERIFY**	**MCR** sees gate **4GE2**	**RESET**
	PLACE	**Peer 9** in **Mode 26**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 26**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
	REMOVE	**Sweep** from zone **4Z1**	
☐	**VERIFY**	**MCR** sees zone **4Z1** is	**NOT SWEPT**
	PLACE	**Peer 9** in **Mode 26**	
☐	**VERIFY**	**Attempt** to place **Peer 9** in **No Access Mode**	**FAIL**
	SWEEP	Zone **4Z1**	

	VERIFY	MCR sees zone **4Z1**	**SWEPT**
	PLACE	**Peer 9** in **Mode 26**	
☐	VERIFY	MCR sees **Peer 9** in **No Access**	**MODE 26**
	PLACE	**Peer 9** in **Mode 16**	
☐	VERIFY	**Peer 9** is in **Controlled Access**	**MODE 16**
	REMOVE	**Sweep** from zone **4Z2**	
☐	VERIFY	MCR sees zone **4Z2** is	**NOT SWEPT**
	PLACE	**Peer 9** in **Mode 26**	
☐	VERIFY	**Attempt** to place **Peer 9** in **No Access Mode**	**SUCCESSFUL**
	SWEEP	Zone **4Z2**	
☐	VERIFY	MCR sees zone **4Z2**	**SWEPT**
☐	VERIFY	MCR sees **Peer 9** remains **No Access**	**MODE 26**
	PLACE	**Peer 9** in **Mode 16**	
☐	VERIFY	**Peer 9** is in **Controlled Access**	**MODE 16**

☐   **Check for acceptance of test Verify necessary conditions for Mode 26**

1.3   **Verify System Response to Opening a Gate while in Mode 24**

	VERIFY	**CD Key switch for**	**XY ARCS**
	PLACE	**Peer 9** in **Mode 24**	
☐	VERIFY	MCR sees **Peer 9** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
☐	VERIFY	MCR sees **RHIC RF CD** on CD page	**ENABLED**
☐	VERIFY	MCR sees **RHIC RF inhibit**	**OFF**
	SET	**RHIC Primary Beam Stop Withdraw command**	**OUT**
☐	VERIFY	MCR sees **RHIC Permit Link**	**ENABLED**
☐	VERIFY	MCR sees **RHIC Injection inhibit**	**OFF**
☐	VERIFY	MCR sees **RHIC ring inhibit**	**OFF**
	FOLLOW	**Test schedule in Table 1, below**	

Open gate	Verify Peer 9 go to Mode 2	Verify sweep lost	Rhic RF CD disab	Verify RF inh ON	Verify Rhic ring inh ON	Verify Peer 9 Permit Link is disab	Verify Rhic Inj. Inh ON	Place Peer 9 in Mode 24 & alrm stop	Rhic RF CD enab	Verify RF inh OFF	Set Rhic prmy BS wdrw cmd OUT	Verify Rhic ring inh OFF	Verify Peer 9 Permit Link is enab	Verify Rhic Inj. Inh OFF	Go to next gate
4GE2	☐	☐	☐	☐	☐	☐	☐		☐	☐		☐	☐	☐	
3GI1	☐	☐	☐	☐	☐	☐	☐		☐	☐		☐	☐	☐	next test

Table 1- Test of Gates in Mode 24

☐   **Check for test acceptance of System Response to Opening a Gate while in Mode 24**

	PLACE	Peer 9 in Mode 26	
☐	VERIFY	MCR sees Peer 9 in No Access	MODE 26
	WAIT	For Beam Imminent Alarm to stop sounding	
☐	VERIFY	MCR sees RHIC RF CD on CD page	ENABLED
☐	VERIFY	MCR sees RHIC RF inhibit	OFF

FOLLOW   Test schedule in Table 2, below

Open gate	Verify Peer 9 go to Mode 2	Verify sweep lost	Verify RF CD disab	Verify RF inh ON	Place Peer 9 in Mode 26	Verify RF CD is enab	Verify RF inh OFF	Test next gate
4GE1	☐	☐	☐	☐		☐	☐	
4GI1	☐	☐	☐	☐		☐	☐	End of test

Table 2- Test of Gates in Mode 26

☐   **Check for acceptance of test Verify System Response to Opening a Gate in Mode 26**

1.5   **Verify Entry gates are securely locked in Mode 24**

	PLACE	Peer 9 in Mode 24	
☐	VERIFY	MCR sees Peer 9 in No Access	MODE 24
	WAIT	For Beam Imminent Alarm to stop sounding	
	OPEN	Gate 4GE1 with #10 RF CA Key and Simultaneous Release	
☐	VERIFY	Attempt to open gate 4GE1 with #10 RF CA Key and Sim. Rel.	FAIL
	OPEN	Gate 4GE1 with #11 RF Sweep Key and Simultaneous Release	
☐	VERIFY	Attempt to open gate 4GE1 with #11 RF Sweep Key and Sim. Rel.	FAIL
	OPEN	Gate 4GE1 with Blue Card	
☐	VERIFY	Attempt to open gate 4GE1 with Blue Card	FAIL

☐   **Check for test acceptance of Verify Entry gates are securely locked in Mode 24**

1.6   **Verify Entry gates are securely locked in Mode 26**

	PLACE	Peer 9 in Mode 26	
☐	VERIFY	MCR sees Peer 9 in No Access	MODE 26
	WAIT	For Beam Imminent Alarm to stop sounding	
	OPEN	Gate 4GE2 with #10 RF CA Key and Simultaneous Release	
☐	VERIFY	Attempt to open gate 4GE2 with #10 RF CA Key and Sim. Rel.	FAIL
	OPEN	Gate 4GE2 with #11 RF Sweep Key and Simultaneous Release	
☐	VERIFY	Attempt to open gate 4GE2 with #11 RF Sweep Key and Sim. Rel.	FAIL
	OPEN	Gate 4GE2 with Blue Card	
☐	VERIFY	Attempt to open gate 4GE2 with Blue Card	FAIL

☐   **Check for test acceptance of Verify Entry gates are securely locked in Mode 26**

1.7   **Verify System Response to Pulling a Crash Cord while in Mode 24**

      Test of Zone 4Z1

☐	**VERIFY**	**CD Key switch for**	**XY ARCS**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to **stop** sounding	
☐	**VERIFY**	**MCR** sees **RF CD** on CD page	**ENABLED**
☐	**VERIFY**	**MCR** sees **RF CD inhibit**	**OFF**
	SET	**RHIC Primary Beam Stop Withdraw command**	**OUT**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC ring inhibit**	**OFF**
	PULL	Any **Zone 4Z1 crash cord [System #: _____]**	
☐	**VERIFY**	**Peer 9** goes to	**MODE 2**
☐	**VERIFY**	**MCR** sees **Sweep** is	**NO SWEEP**
☐	**VERIFY**	**MCR** sees **RF CD** on CD page	**DISABLED**
☐	**VERIFY**	**MCR** sees **RF CD inhibit**	**ON**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection inhibit**	**ON**
☐	**VERIFY**	**MCR** sees **RHIC ring inhibit**	**ON**
	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	**VERIFY**	**Crash is**	**RESET**
	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**Peer 9** is in **Beam Imminent Mode**	**MODE 24**
	PULL	Any **Zone 4Z1 crash cord [System #: _____]** when alarm starts sounding	
☐	**VERIFY**	**Beam Imminent alarm**	**STOPS**
☐	**VERIFY**	**Peer 9** has moved to	**MODE 2**
☐	**VERIFY**	**MCR** sees **Zone 4Z1**	**CRASHED**
	PLACE	**Peer 9** in **Mode 8** (Restricted Access)	
☐	**VERIFY**	**Attempt** to go to **Mode 8**	**FAIL**
	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	**VERIFY**	**Crash is**	**RESET**
	PLACE	**Peer 9** in **Mode 8**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **Restricted Access**	**MODE 8**

      Test of Zone 4Z2

	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**

PULL	Any **Zone 4Z2 crash cord [System #: _____]** when **alarm starts sounding**		
☐ **VERIFY**	**Beam Imminent alarm**		**STOPS**
☐ **VERIFY**	**Peer 9** has moved to		**MODE 2**
☐ **VERIFY**	**MCR** sees **Zone 4Z2**		**CRASHED**
PLACE	**Peer 9** in **Mode 8,** Restricted Access		
☐ **VERIFY**	**Attempt** to go to **Mode 8**		**FAIL**
REARM	**Crash device**		
RESET	**Crash at MCR**		
☐ **VERIFY**	**Crash is**		**RESET**
PLACE	**Peer 9** in **Mode 8**		
☐ **VERIFY**	**MCR** sees **Peer 9** in **Restricted Access**		**MODE 8**

☐ **Check for test acceptance of Verify System Response to Pulling a Crash Cord while in Mode 24**

1.8 **Verify System Response to Pulling a Crash Cord while in Mode 26**

Test of Zone 4Z1

PLACE	**Peer 9** in **Mode 26**		
☐ **VERIFY**	**MCR** sees **Peer 9** in **No Access**		**MODE 26**
WAIT	For **Beam Imminent Alarm** to **stop** sounding		
☐ **VERIFY**	**MCR** sees **RF CD** on CD page		**ENABLED**
☐ **VERIFY**	**MCR** sees **RF CD inhibit**		**OFF**
PULL	Any **Zone 4Z1 crash cord [System #: _____]**		
☐ **VERIFY**	**Peer 9** goes to		**MODE 2**
☐ **VERIFY**	**MCR** sees **Sweep** is		**NO SWEEP**
☐ **VERIFY**	**MCR** sees **RF CD** on CD page		**DISABLED**
☐ **VERIFY**	**MCR** sees **RF CD inhibit**		**ON**
REARM	**Crash device**		
RESET	**Crash at MCR**		
☐ **VERIFY**	**Crash is**		**RESET**
PLACE	**Peer 9** in **Mode 26**		
☐ **VERIFY**	**Peer 9** is in **Beam Imminent Mode**		**MODE 24**
PULL	Any **Zone 4Z1 crash cord [System #: _____]** when **alarm starts sounding**		
☐ **VERIFY**	**Beam Imminent alarm**		**STOPS**
☐ **VERIFY**	**Peer 9** has moved to		**MODE 2**
☐ **VERIFY**	**MCR** sees **Zone 4Z1**		**CRASHED**
PLACE	**Peer 9** in **Mode 8** (Restricted Access)		
☐ **VERIFY**	**Attempt** to go to **Mode 8**		**FAIL**
REARM	**Crash device**		
RESET	**Crash at MCR**		
☐ **VERIFY**	**Crash is**		**RESET**

	PLACE	**Peer 9** in **Mode 8**	
☐	VERIFY	**MCR** sees **Peer 9** in **Restricted Access**	MODE 8

Test of Zone 4Z2

	PLACE	**Peer 9** in **Mode 26**	
☐	VERIFY	**MCR** sees **Peer 9** in **No Access**	MODE 26

	PULL	Any **Zone 4Z2 crash cord [System #: _____]** when **alarm starts sounding**	
☐	VERIFY	**Beam Imminent alarm**	STOPS
☐	VERIFY	**Peer 9** has moved to	MODE 2
☐	VERIFY	**MCR** sees **Zone 4Z2**	CRASHED
	PLACE	**Peer 9** in **Mode 8** (Restricted Access)	
☐	VERIFY	**Attempt** to go to **Mode 8**	FAIL
	REARM	**Crash device**	
	RESET	**Crash at MCR**	
☐	VERIFY	**Crash is**	RESET
	PLACE	**Peer 9** in **Mode 8**	
☐	VERIFY	**MCR** sees **Peer 9** in **Restricted Access**	MODE 8

☐ **Check for test acceptance of Verify System Response to Pulling a Crash Cord while in Mode 26**

1.9   Verify System Response to ODH trip while in Mode 24

	VERIFY	**CD Key switch for**	XY ARCS
	PLACE	**Peer 15** in **Mode 24**	
☐	VERIFY	**MCR** sees **Peer 15** in **No Access**	MODE 24
	WAIT	For **Beam Imminent Alarm** to stop sounding	
☐	VERIFY	**MCR** sees **RF CD** on CD page	ENABLED
☐	VERIFY	**MCR** sees **RF CD inhibit**	OFF
	SET	**RHIC Primary Beam Stop Withdraw command**	OUT
☐	VERIFY	**MCR** sees **RHIC Injection CD** on CD pg	DISABLED
☐	VERIFY	**MCR** sees **RHIC Permit Link**	ENABLED
☐	VERIFY	**MCR** sees **RHIC Injection inhibit**	OFF
☐	VERIFY	**MCR** sees **RHIC ring inhibit**	OFF
	TRIP	**ODH sensor** using test button, following **Table 2,** below	

ODH sensor	Trip sensor	Verify Peer 15 stays in Mode 24	Verify RF CD Enabled	Verify Rhic RF inh OFF	Verify BS wdraw cmd OUT	Verify Rhic ring inh OFF	Verify Permit link is enabled	Verify Rhic Inj. Inh OFF	Verify strobe on	Verify sonalert on	Verify fans & vents off	Go to
3AS1/A		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Div B**
3AS1/B		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Next ODH**
4XAS1/A		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Div B**
4XAS1/B		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Next ODH**
4AS1/A		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**Div B**
4AS1/B		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	**End of test**

Table 3 – Test of ODH sensors in Mode 24

☐ **Check for test acceptance of Verify System Response to ODH trip while in Mode 24**

1.10 **Verify System Response to ODH trip while in Mode 26**

	PLACE	**Peer 9** in **Mode 26**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 26**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
☐	**VERIFY**	**MCR** sees **RF CD** on CD page	**ENABLED**
☐	**VERIFY**	**MCR** sees **RF CD inhibit**	**OFF**
	TRIP	**ODH sensor** using test button, following **Table 4,** below	

ODH sensor	Trip sensor	Verify Peer 9 goes to Mode 2	Verify RF CD disabled	Verify Rhic RF inh ON	Verify strobe on	Verify sonalert on	Verify fans & vents ON below	Reset ODH alarm	Place Peer 9 in Mode 26	Verify RF CD Enab	Verify Rhic RF inh OFF	Verify Strobe & sonalrt OFF	Go to
3AS1/A		☐	☐	☐	☐	☐	☐			☐	☐	☐	Div B
3AS1/B		☐	☐	☐	☐	☐	☐			☐	☐	☐	Next ODH
4XAS1/A		☐	☐	☐	☐	☐	☐			☐	☐	☐	Div B
4XAS1/B		☐	☐	☐	☐	☐	☐			☐	☐	☐	Next ODH
4AS1/A		☐	☐	☐	☐	☐	☐			☐	☐	☐	Div B
4AS1/B		☐	☐	☐	☐	☐	☐			☐	☐	☐	End of test

Table 4 – Test of ODH sensors in Mode 26

_____ Item is not on screen and must be verified locally.

3AS1A	**Fans: 3EF2** ☐	**Vents: 3AV2** ☐	
3AS1B	**Fans: 3EF2** ☐	**Vents: 3AV2** ☐	
4XAS1A	**Fans: 4XEF1** ☐	**Vents: 3AV2** ☐	**4XAV1** ☐
4XAS1B	**Fans: 4XEF1** ☐	**Vents: 3AV2** ☐	**4XAV1** ☐
4AS1A	**Fans: 4EF1** ☐	**Vents: **4AV1**** ☐	****4XAV2**** ☐
4AS1B	**Fans: 4EF1** ☐	**Vents: **4AV1**** ☐	****4XAV2**** ☐

☐ **Check for test acceptance of Verify System Response to ODH trip while in Mode 26**

1.11   Test Emergency fan ON/OFF controls at 4GE2 in Mode 24

	PLACE	**Peer 9** in **Mode 24**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
	PRESS	Emergency fan **ON** button at gate **4GE2**	
	WAIT	For **90 sec** timeout counter	
☐	**VERIFY**	Fan **3EF2** is	**ON**
☐	**VERIFY**	Fan **4EF1** is	**ON**
☐	**VERIFY**	Fan **5EF1** is	**ON**
☐	**VERIFY**	Fan **4XEF1** is	**ON**
☐	**VERIFY**	Fan **4XEF2** is	**ON**
☐	**VERIFY**	Vent **3AV2** is	**OPEN**
☐	**VERIFY**	Vent **3AV3** is	**OPEN**
☐	**VERIFY**	Vent ****4AV1**** is	**OPEN**
☐	**VERIFY**	Vent **4XAV1** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV2**** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV3**** is	**OPEN**

	PRESS	Emergency fan **OFF** button at gate **4GE2**	
	WAIT	For **90 sec** timeout counter	
☐	**VERIFY**	Fan **3EF2** is	**OFF**
☐	**VERIFY**	Fan **4EF1** is	**OFF**
☐	**VERIFY**	Fan **5EF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF2** is	**OFF**
☐	**VERIFY**	Vent **3AV2** is	**CLOSED**
☐	**VERIFY**	Vent **3AV3** is	**CLOSED**
☐	**VERIFY**	Vent ****4AV1**** is	**CLOSED**
☐	**VERIFY**	Vent **4XAV1** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV2**** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV3**** is	**CLOSED**

☐   **Check for acceptance of Test Emergency fan ON/OFF controls at 4GE2 in Mode 24**

1.12   **Test Emergency fan ON/OFF controls at 4GE2 in Mode 26**

	PLACE	**Peer 9** in **Mode 26**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 26**
	WAIT	For **Beam Imminent Alarm** to stop sounding	
	PRESS	Emergency fan **ON** button at gate **4GE2**	
	WAIT	For **90 sec** timeout counter	
☐	**VERIFY**	Fan **3EF2** is	**ON**
☐	**VERIFY**	Fan **4EF1** is	**ON**
☐	**VERIFY**	Fan **5EF1** is	**ON**
☐	**VERIFY**	Fan **4XEF1** is	**ON**
☐	**VERIFY**	Fan **4XEF2** is	**ON**
☐	**VERIFY**	Vent **3AV2** is	**OPEN**
☐	**VERIFY**	Vent **3AV3** is	**OPEN**
☐	**VERIFY**	Vent ****4AV1**** is	**OPEN**
☐	**VERIFY**	Vent **4XAV1** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV2**** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV3**** is	**OPEN**
	PRESS	Emergency fan **OFF** button at gate **4GE2**	
	WAIT	For **90 sec** timeout counter	
☐	**VERIFY**	Fan **3EF2** is	**OFF**
☐	**VERIFY**	Fan **4EF1** is	**OFF**
☐	**VERIFY**	Fan **5EF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF2** is	**OFF**
☐	**VERIFY**	Vent **3AV2** is	**CLOSED**
☐	**VERIFY**	Vent **3AV3** is	**CLOSED**
☐	**VERIFY**	Vent ****4AV1**** is	**CLOSED**
☐	**VERIFY**	Vent **4XAV1** is	**CLOSED**

☐	**VERIFY**	Vent ****4XAV2**** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV3**** is	**CLOSED**

☐ **Check for acceptance of Test Emergency fan ON/OFF controls at 4GE2 in Mode 26**

1.13 **Test MCR reset of Emergency ON/OFF at 4GE2 in Mode 24**

☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**

PRESS	Emergency fan **ON** button at gate **4GE2**	
WAIT	For **90 sec** timeout counter	

☐	**VERIFY**	Fan **3EF2** is	**ON**
☐	**VERIFY**	Fan **4EF1** is	**ON**
☐	**VERIFY**	Fan **5EF1** is	**ON**
☐	**VERIFY**	Fan **4XEF1** is	**ON**
☐	**VERIFY**	Fan **4XEF2** is	**ON**
☐	**VERIFY**	Vent **3AV2** is	**OPEN**
☐	**VERIFY**	Vent **3AV3** is	**OPEN**
☐	**VERIFY**	Vent ****4AV1**** is	**OPEN**
☐	**VERIFY**	Vent **4XAV1** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV2**** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV3**** is	**OPEN**

PRESS	Emergency fan **OFF** button at **MCR**	
WAIT	For **90 sec** timeout counter	

☐	**VERIFY**	Fan **3EF2** is	**OFF**
☐	**VERIFY**	Fan **4EF1** is	**OFF**
☐	**VERIFY**	Fan **5EF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF2** is	**OFF**
☐	**VERIFY**	Vent **3AV2** is	**CLOSED**
☐	**VERIFY**	Vent **3AV3** is	**CLOSED**
☐	**VERIFY**	Vent ****4AV1**** is	**CLOSED**
☐	**VERIFY**	Vent **4XAV1** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV2**** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV3**** is	**CLOSED**

☐ **Check for acceptance of Test MCR reset of Emergency ON/OFF at 4GE2 in Mode 24**

1.14 **Test MCR reset of Emergency ON/OFF at 4GE2 in Mode 26**

☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 26**

PRESS	Emergency fan **ON** button at gate **4GE2**	
WAIT	For **90 sec** timeout counter	

☐	**VERIFY**	Fan **3EF2** is	**ON**
☐	**VERIFY**	Fan **4EF1** is	**ON**
☐	**VERIFY**	Fan **5EF1** is	**ON**

☐	**VERIFY**	Fan **4XEF1** is	**ON**
☐	**VERIFY**	Fan **4XEF2** is	**ON**
☐	**VERIFY**	Vent **3AV2** is	**OPEN**
☐	**VERIFY**	Vent **3AV3** is	**OPEN**
☐	**VERIFY**	Vent ****4AV1**** is	**OPEN**
☐	**VERIFY**	Vent **4XAV1** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV2**** is	**OPEN**
☐	**VERIFY**	Vent ****4XAV3**** is	**OPEN**
	PRESS	Emergency fan **OFF** button at **MCR**	
	WAIT	For **90 sec** timeout counter	
☐	**VERIFY**	Fan **3EF2** is	**OFF**
☐	**VERIFY**	Fan **4EF1** is	**OFF**
☐	**VERIFY**	Fan **5EF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF1** is	**OFF**
☐	**VERIFY**	Fan **4XEF2** is	**OFF**
☐	**VERIFY**	Vent **3AV2** is	**CLOSED**
☐	**VERIFY**	Vent **3AV3** is	**CLOSED**
☐	**VERIFY**	Vent ****4AV1**** is	**CLOSED**
☐	**VERIFY**	Vent **4XAV1** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV2**** is	**CLOSED**
☐	**VERIFY**	Vent ****4XAV3**** is	**CLOSED**

☐ **Check for acceptance of Test MCR reset of Emergency ON/OFF at 4GE2 in Mode 26**

1.15   Test local fan controls in service building 1004B Mode 24

☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
	PRESS	Fan **ON** button at fan box	
☐	**VERIFY**	**1004B fan** is	**ON**
☐	**VERIFY**	**1004B vent** is	**OPEN**
	TURN OFF	**1004B fan** using **MCR Fan OFF button**	
☐	**VERIFY**	Attempt to turn off **1004B fan** using **MCR Fan OFF button**	**FAIL**
	PRESS	Fan **OFF** button at fan box	
☐	**VERIFY**	**1004B fan** is	**OFF**
☐	**VERIFY**	**1004B vent** is	**CLOSED**

☐ **Check for acceptance of Test local fan controls in service building 1004B Mode 24**

1.16 **Test local fan controls in service building 1004B Mode 26**

☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 26**
	PRESS	Fan **ON** button at fan box	
☐	**VERIFY**	**1004B fan** is	**ON**
☐	**VERIFY**	**1004B vent** is	**OPEN**
	TURN OFF	**1004B fan** using **MCR Fan OFF button**	
☐	**VERIFY**	Attempt to turn off **1004B fan** using **MCR Fan OFF button**	**FAIL**
	PRESS	Fan **OFF** button at fan box	
☐	**VERIFY**	**1004B fan** is	**OFF**
☐	**VERIFY**	**1004B vent** is	**CLOSED**

☐   **Check for acceptance of Test local fan controls in service building 1004B Mode 26**

1.17 **Test Division A loss of Remote I/O in Mode 24**

☐	**VERIFY**	CD Key switch is **set for**	**XY ARCS**
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
☐	**VERIFY**	**MCR** sees **RHIC RF CD** on CD pg	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC RF inhibit**	**OFF**
	SET	**RHIC Primary Beam Stop Withdraw command**	**OUT**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC ring inhibit**	**OFF**
	UNPLUG	Remote **I/O** cable from **Scanner module** in **Peer 9A**	
☐	**VERIFY**	**MCR** sees **Peer 9 Div A CD RIO** on H/W pg	**FAULT**
☐	**VERIFY**	**MCR** sees **Peer 9 Div A** go to	**MODE 2**
☐	**VERIFY**	**MCR** sees **RHIC RF CD** on CD pg	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC RF inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees **RHIC Permit Link**	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC Injection inhibit**	**ON**
☐	**VERIFY**	**MCR** sees **RHIC ring inhibit**	**ON**
☐	**VERIFY**	**MCR** sees **RHIC Injn rhbk latch**	**ON**
☐	**VERIFY**	**MCR** sees **RHIC rhbk latch**	**OFF**
☐	**VERIFY**	MCR sees on CD pg **W**	**REACHBACK**
☐	**VERIFY**	MCR sees on CD pg **RHIC**	**REACHBACK**
☐	**VERIFY**	MCR sees on CD pg **B/S G3**	**IN**
	REPLACE	Remote **I/O** cable at **Scanner module** in **Peer 9A**	
	RESET	**NG CRIT I/O** condition at **MCR**	

☐	**VERIFY**	**MCR** sees **CD RIO**	**OK**
	PLACE	**Peer 9** in **Mode 2**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **Safe Access**	**MODE 2**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **Controlled Access**	**MODE 16**

   ☐   **Check for test acceptance of Division A loss of Remote I/O in Mode 24**

1.18   **Test Division A loss of Remote I/O in Mode 26**

☐	**VERIFY**	CD Key switch is **set for**	**XY ARCS**
☐	**VERIFY**	**MCR** sees **Peer 9** in **No Access**	**MODE 24**
☐	**VERIFY**	**MCR** sees **RHIC RF CD** on CD pg	**ENABLED**
☐	**VERIFY**	**MCR** sees **RHIC RF inhibit**	**OFF**
	UNPLUG	Remote **I/O** cable from **Scanner module** in **Peer 9A**	
☐	**VERIFY**	**MCR** sees **Peer 9 Div A CD RIO** on H/W pg	**FAULT**
☐	**VERIFY**	**MCR** sees **Peer 9 Div A** go to	**MODE 2**
☐	**VERIFY**	**MCR** sees **RHIC RF CD** on CD pg	**DISABLED**
☐	**VERIFY**	**MCR** sees **RHIC RF inhibit**	**OFF**
☐	**VERIFY**	**MCR** sees on CD pg **W**	**REACHBACK**
☐	**VERIFY**	**MCR** sees on CD pg **RHIC**	**REACHBACK**
☐	**VERIFY**	**MCR** sees on CD pg **BS G3**	**IN**
	REPLACE	Remote **I/O** cable at **Scanner module** in **Peer 9A**	
	RESET	**NG CRIT I/O** condition at **MCR**	
☐	**VERIFY**	**MCR** sees **CD RIO**	**OK**
	PLACE	**Peer 9** in **Mode 2**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **Safe Access**	**MODE 2**
	PLACE	**Peer 9** in **Mode 16**	
☐	**VERIFY**	**MCR** sees **Peer 9** in **Controlled Access**	**MODE 16**

   ☐   **Check for test acceptance of Division A loss of Remote I/O in Mode 26**

1.19   Test Division B loss of Remote I/O in Mode 24

☐ **VERIFY**   CD Key switch is **set for**   **XY ARCS**

☐ **VERIFY**   **MCR** sees **Peer 9** in **No Access**   **MODE 24**

☐ **VERIFY**   **MCR** sees **RHIC RF CD** on CD pg   **ENABLED**
☐ **VERIFY**   **MCR** sees **RHIC RF inhibit**   **OFF**

SET   **RHIC Primary Beam Stop Withdraw command**   **OUT**

☐ **VERIFY**   **MCR** sees **RHIC Permit Link**   **ENABLED**
☐ **VERIFY**   **MCR** sees **RHIC Injection inhibit**   **OFF**
☐ **VERIFY**   **MCR** sees **RHIC ring inhibit**   **OFF**

UNPLUG   Remote **I/O** cable from **Scanner module** in **Peer 9B**

☐ **VERIFY**   **MCR** sees **Peer 9 Div B CD RIO** on H/W pg   **FAULT**

☐ **VERIFY**   **MCR** sees **Peer 9 Div B** go to   **MODE 2**

☐ **VERIFY**   **MCR** sees **RHIC RF CD** on CD pg   **DISABLED**
☐ **VERIFY**   **MCR** sees **RHIC RF inhibit**   **OFF**
☐ **VERIFY**   **MCR** sees **RHIC Permit Link**   **DISABLED**
☐ **VERIFY**   **MCR** sees **RHIC Injection inhibit**   **ON**
☐ **VERIFY**   **MCR** sees **RHIC ring inhibit**   **ON**
☐ **VERIFY**   **MCR** sees **RHIC Injn rhbk latch**   **ON**
☐ **VERIFY**   **MCR** sees **RHIC rhbk latch**   **OFF**
☐ **VERIFY**   **MCR** sees on CD pg **W**   **REACHBACK**
☐ **VERIFY**   **MCR** sees on CD pg **RHIC**   **REACHBACK**
☐ **VERIFY**   **MCR** sees on CD pg **BS G3**   **IN**

REPLACE   Remote **I/O** cable at **Scanner module** in **Peer 9B**

RESET   **NG CRIT I/O** condition at **MCR**
☐ **VERIFY**   **MCR** sees **CD RIO**   **OK**

PLACE   **Peer 9** in **Mode 2**
☐ **VERIFY**   **MCR** sees **Peer 9** in **Safe Access**   **MODE 2**

PLACE   **Peer 9** in **Mode 16**
☐ **VERIFY**   **MCR** sees **Peer 9** in **Controlled Access**   **MODE 16**

☐   **Check for test acceptance of Division B loss of Remote I/O in Mode 24**

1.20 **Test Division B loss of Remote I/O in Mode 26**

☐ **VERIFY** CD Key switch is **set for** **XY ARCS**

☐ **VERIFY** **MCR** sees **Peer 9** in **No Access** **MODE 24**

☐ **VERIFY** **MCR** sees **RHIC RF CD** on CD pg **ENABLED**
☐ **VERIFY** **MCR** sees **RHIC RF inhibit** **OFF**

UNPLUG Remote **I/O** cable from **Scanner module** in **Peer 9B**

☐ **VERIFY** **MCR** sees **Peer 9 Div B CD RIO** on H/W pg **FAULT**

☐ **VERIFY** **MCR** sees **Peer 9 Div B** go to **MODE 2**

☐ **VERIFY** **MCR** sees **RHIC RF CD** on CD pg **DISABLED**
☐ **VERIFY** **MCR** sees **RHIC RF inhibit** **OFF**
☐ **VERIFY** **MCR** sees on CD pg **W** **REACHBACK**
☐ **VERIFY** **MCR** sees on CD pg **RHIC** **REACHBACK**
☐ **VERIFY** **MCR** sees on CD pg **BS G3** **IN**

REPLACE Remote **I/O** cable at **Scanner module** in **Peer 9B**

RESET **NG CRIT I/O** condition at **MCR**
☐ **VERIFY** **MCR** sees **CD RIO** **OK**

PLACE **Peer 9** in **Mode 2**
☐ **VERIFY** **MCR** sees **Peer 9** in **Safe Access** **MODE 2**

PLACE **Peer 9** in **Mode 16**
☐ **VERIFY** **MCR** sees **Peer 9** in **Controlled Access** **MODE 16**

☐ **Check for test acceptance of Division B loss of Remote I/O in Mode 26**

1.21 **Sweep tests in Mode 24**

CLOSE **Peer 9 gate:** 5GS1
RESET **Peer 9 gates:** 3GI1, 3EL1, 4GE1, 4MD1, 4MD2, 4GE2, 4GI1, 4GE3, 4EL1 and 4ED1
☐ **VERIFY** **Peer 9 gates:** ☐ 3GI1, ☐ 3EL1, ☐ 4GE1, ☐ 4MD1, ☐ 4MD2, ☐ 4GE2, ☐ 4GI1, ☐ 4GE3, ☐ 4EL1 and ☐ 4ED1 are **RESET**
SWEEP **Peer 9 Zones:** 4Z1, 4Z2
☐ **VERIFY** **Peer 9 Zones:** ☐ 4Z1, ☐ 4Z2 are **SWEPT**
PLACE **Peer 9** in **Mode 24**
☐ **VERIFY** **Peer 9** is in **No Access** **MODE 24**
PLACE **Peer 9** in **Mode 16**
☐ **VERIFY** **Peer 9** is in **Controlled Access** **MODE 16**

FOLLOW **Test Schedule in Table 5, below**

Zone	Gate	Open gate	Verify sweep NO SWEEP	Verify cannot sweep with gate open	Close gate	Force sweep	Verify cannot go to Mode 24	Reset gate	Verify can go to Mode 24	Go to Mode 16 & next gate
4Z1	**4GE1**		☐	☐			☐		☐	
4Z2	**4GE3**		☐	☐			☐		☐	**End of test**

Table 5 – Sweep tests in Mode 24

☐ **Check for test acceptance of Sweep tests in Mode 24**

1.22 **Sweep tests in Mode 26**

CLOSE	**Peer 9 gate:** 5GS1	
RESET	**Peer 9 gates:** 3GI1, 3EL1, 4GE1, 4MD1, 4MD2, 4GE2, 4GI1, 4GE3, 4EL1 and 4ED1	
☐ **VERIFY**	**Peer 9 gates:** ☐ 3GI1, ☐ 3EL1, ☐ 4GE1, ☐ 4MD1, ☐ 4MD2, ☐ 4GE2, ☐ 4GI1, ☐ 4GE3, ☐ 4EL1 and ☐ 4ED1 are	**RESET**
SWEEP	**Peer 9 Zones:** 4Z1, 4Z2	
☐ **VERIFY**	**Peer 9 Zones:** ☐ 4Z1, ☐ 4Z2 are	**SWEPT**
PLACE	**Peer 9** in **Mode 26**	
☐ **VERIFY**	**Peer 9** is in **No Access**	**MODE 26**
PLACE	**Peer 9** in **Mode 16**	
☐ **VERIFY**	**Peer 9** is in **Controlled Access**	**MODE 16**
FOLLOW	**Test Schedule in Table 6, below**	

Zone	Gate	Open gate	Verify sweep NO SWEEP	Verify cannot sweep with gate open	Close gate	Force sweep	Verify cannot go to Mode 26	Reset gate	Verify can go to Mode 26	Go to Mode 16; End of test
4Z1	**4GE1**		☐	☐			☐		☐	

Table 6 – Sweep tests in Mode 26

☐ **Check for test acceptance of Sweep tests in Mode 26**

1.23 Chipmunk Tests in Mode 24

PLACE   **Peer 9** in **Mode 24**

☐ **VERIFY**   **MCR** sees **Peer 9** in **No Access**   **MODE 24**

WAIT   For **Beam Imminent Alarm** to stop sounding

☐ **VERIFY**   **MCR** sees **RHIC RF CD** on CD pg   **ENABLED**

☐ **VERIFY**   **MCR** sees **RHIC RF inhibit**   **OFF**

PRESS   **RHIC Primary Beam Stop Withdraw** button in **MCR**

☐ **VERIFY**   **MCR** sees **RHIC Permit Link**   **ENABLED**

☐ **VERIFY**   **MCR** sees **RHIC Injection inhibit**   **OFF**

☐ **VERIFY**   **MCR** sees **RHIC ring inhibit**   **OFF**

ATTACH   **Test Box** to **Chipmunk** prior to test

FOLLOW   **Tests in Tables 7, 8, 9 and 10** below

C'munk	Press & verify div A trip	Verify Peer 9 stays in mode 24	Verify RF CD enabled & RF Inh OFF	Verify div A Rhic ring inh ON	Verify div A Rhic permit link disabled	Verify div A Rhic Inj. Inh ON	Cycle pmry BS wdraw OUT	Verify div A Rhic ring inh OFF	Verify div A Rhic permit link enabled	Verify div A Rhic Ijn. Inh OFF	Goto table 8 for div B trip
C51	☐	☐	☐	☐	☐	☐		☐	☐	☐	
C52	☐	☐	☐	☐	☐	☐		☐	☐	☐	

Table 7 – Division A trip test in Mode 24

C'munk	Press & verify div B trip	Verify Peer 9 stays in mode 24	Verify RF CD enabled & RF Inh OFF	Verify div B Rhic ring inh ON	Verify div B Rhic permit link disabled	Verify div B Rhic Inj. inh ON	Cycle pmry BS with-draw	Verify div B Rhic ring inh OFF	Verify div B Rhic permit link enabled	Verify div B Rhic Ijn. Inh OFF	Goto table 9 for div A fails
C51	☐	☐	☐	☐	☐	☐		☐	☐	☐	
C52	☐	☐	☐	☐	☐	☐		☐	☐	☐	

Table 8 – Division B Trip test in Mode 24

C'munk	Press & verify div A fails	Verify Peer 9 goes to mode 2	Verify div A RF CD disabled & RF Inh ON	Verify div A Rhic ring inh ON	Verify div A Rhic permit link disabled	Verify div A Rhic Inj. inh ON	Place Peer 9 in mode 24 & alarm stop	Verify RF CD enabled & RF Inh OFF	Press pmry BS with-draw	Verify div A Rhic ring inh OFF	Verify div A Rhic permit link enabled	Verify div A Rhic Ijn. Inh OFF	Goto table 10 for div B fails
C51	☐	☐	☐	☐	☐	☐		☐		☐	☐	☐	
C52	☐	☐	☐	☐	☐	☐		☐		☐	☐	☐	

Table 9 – Division A Fails test in Mode 24

C'munk	Press & verify div B fails	Verify Peer 9 goes to mode 2	Verify div B RF CD disabled & RF Inh ON	Verify div B Rhic ring inh ON	Verify div B Rhic permit link disabled	Verify div B Rhic Inj. inh ON	Place Peer 9 in mode 24 & alarm stop	Verify RF CD enabled & RF Inh OFF	Press pmry BS with-draw	Verify div B Rhic ring inh OFF	Verify div B Rhic permit link enabled	Verify div B Rhic Ijn. Inh OFF	See end of test instrns below
C51	☐	☐	☐	☐	☐	☐		☐		☐	☐	☐	
C52	☐	☐	☐	☐	☐	☐		☐		☐	☐	☐	

Table 10 – Division B Fails test in Mode 24

End of Test Instructions:

DETACH	**Test Box** from **Chipmunk** after test	
CONNECT	**Cable to Chipmunk**	
RESET	Chipmunk **faults** at **MCR**	
☐ **VERIFY**	**MCR** sees **Chipmunk**	**OK**
ATTACH	**Test Box** to next **Chipmunk** for test / or **end Chipmunk test**	
START	**Test sequence** at **Table 7**	

☐ **Check for test acceptance of Chipmunk Tests in Mode 24**

1.24 Chipmunk Tests in Mode 26

    PLACE   **Peer 9** in **Mode 26**

☐ **VERIFY**   **MCR** sees **Peer 9** in **No Access**   **MODE 26**

    WAIT   For **Beam Imminent Alarm** to stop sounding

☐ **VERIFY**   **MCR** sees **RHIC RF CD** on CD pg   **ENABLED**

☐ **VERIFY**   **MCR** sees **RHIC RF inhibit**   **OFF**

    ATTACH   **Test Box** to **Chipmunk** prior to test

    FOLLOW   **Tests in Tables 11, 12, 13 and 14** below

C'munk	Press & verify div A trip	Verify Peer 9 stays in mode 26	Verify div A Rhic RF CD disabled	Verify div A Rhic RF CD inh ON	Reset & verify Trip reset	Verify div A Rhic RF CD enabled	Verify div A Rhic RF CD inh OFF	Goto table 12 for div B trip
C50	☐	☐	☐	☐	☐	☐	☐	

Table 11 – Division A trip test in Mode 26

C'munk	Press & verify div B trip	Verify Peer 9 stays in mode 26	Verify div B Rhic RF CD disabled	Verify div B Rhic RF CD inh ON	Reset & verify Trip reset	Verify div B Rhic RF CD enabled	Verify div B Rhic RF CD inh OFF	Goto table 13 for div A fails
C50	☐	☐	☐	☐	☐	☐	☐	

Table 12 – Division B Trip test in Mode 26

C'munk	Press & verify div A fails	Verify Peer 9 goes to mode 2	Verify div A Rhic RF CD disabled	Verify div A Rhic RF CD inh ON	Reset & verify Trip reset	Place Peer 9 in mode 26 & alarm stop	Verify div A Rhic RF CD enabled	Verify div A Rhic RF CD inh OFF	Goto table 14 for div B fails
C50	☐	☐	☐	☐	☐		☐	☐	

Table 13 – Division A Fails test in Mode 26

C'munk	Press & verify div B fails	Verify Peer 9 goes to mode 2	Verify div B Rhic RF CD disabled	Verify div B Rhic RF CD inh ON	Reset & verify Trip reset	Place Peer 9 in mode 26 & alarm stop	Verify div B Rhic RF CD enabled	Verify div B Rhic RF CD inh OFF	See end of test instrns below
C50	☐	☐	☐	☐	☐		☐	☐	

Table 14 – Division B Fails test in Mode 26

End of Test Instructions:

       DETACH   **Test Box** from **Chipmunk** after test
       CONNECT   **Cable to Chipmunk**
       RESET   Chipmunk **faults** at **MCR**
☐ **VERIFY**   **MCR** sees **Chipmunk**   **OK**

       ATTACH   **Test Box** to next **Chipmunk** for test / or **end Chipmunk test**
       START   **Test sequence** at **Table 11**

   ☐   **Check for test acceptance of Chipmunk Tests in Mode 26**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

                                       Date: _____/____/_____

TTL: Sign for completion of final testing: _____

                                       Date: _____/_____/_____